AUTHOR/SUBJECT INDEX

A

A-scan
application of Fourier analysis to clinical study of patterns of tissue movement (Tristam), 695
on estimating the number density of random scatterers from backscattered acoustic signals (Sleefe), 709

Absorption
the effect of solvation on the ultrasonic absorption of bovine serum albumin solutions (Evans), 299

Acceleration time
efficacy of echo-Doppler for the evaluation of renovascular disease (Handa), 1

Acoustic cavitation
biological effects of shock waves: kidney haemorrhage by shock waves in dogs-administration rate dependence (Delius), 689

Acoustic impedance
comparison of theoretical scattering results and ultrasonic data from clinical liver examinations (Lizzi), 377

Acoustic neurinoma
use of amplitude-modulated focused ultrasound for diagnosis of hearing disorders (Tsirulnikov), 277

Aerosol production
potential hazards of the dental descaler (Walmsley), 15

Age
age dependence of the flow velocity in the basal cerebral arteries-a transcranial Doppler ultrasound study (Grolimund), 191
measurement of ultrasonic non-linear parameter in excised fat tissues (Errabolu), 137

Alcohol
in vivo measurements of ultrasound attenuation in normal or diseased liver (Parker), 127
Alfirevic, Z., see Kurjak, A.
Alsters, J. L. C. M., see de Knecht, S.
Altieri, P., see Barracca, A.

Amplitude modulation
use of amplitude-modulated focused ultrasound for diagnosis of hearing disorders (Tsirulnikov), 277

Angiogenesis
biological effects of shock waves: kidney damage by shock waves in dogs-dose dependence (Delius), 117

Angiography
quantitative assessment of carotid artery disease by continuous wave and pulsed multigated Doppler-prospective comparison with angiography (Sillesen), 641

Anticonvulsant therapy
the role of ultrasound in the early diagnosis of fetal structural defects following maternal anticonvulsant therapy (Wladimiroff), 657

Aorta
the relationship between fetal heart rate and Doppler blood flow velocity waveforms (van den Wijngaard), 593

Aperture
in vivo and *in vitro* ultrasound beam distortion measurements of a large aperture and a conventional aperture focussed transducer (Moshfeghi), 415

Apnoea
determination of the presence of fetal apnoea using umbilical artery and umbilical vein Doppler waveforms (Hoskins), 589
Archer, L. N. J., see Evans, D. H.

Artery
a transmission line modelling approach to the interpretation of uterine Doppler waveforms (Mo), 365
age dependence of the flow velocity in the basal cerebral arteries-a transcranial Doppler ultrasound study (Grolimund), 191
antenatal fetal blood flow in the descending aorta and in the umbilical vein and their ratio in normal pregnancy (Chen), 263
automated calculation of stenosis diameters from the width of the velocity jet with the use of a multi-gate pulsed Doppler system (de Knecht), 575
biological effects of shock waves: kidney damage by shock waves in dogs-dose dependence (Delius), 117
carbon dioxide reactivity of the blood flow in human basilar artery estimated by the transcranial Doppler method in normal men: a comparison with that of the middle cerebral artery (Ogawa), 479
carotid artery wall properties in normotensive and borderline hypertensive subjects of various ages (van Merode), 563
changes in Doppler waveforms can predict pressure reduction across internal carotid artery stenoses (Sillesen), 649
conventional and color Doppler in the assessment of fetal and maternal circulation (Kurjak), 337
determination of the presence of fetal apnoea using umbilical artery and umbilical vein Doppler waveforms (Hoskins), 589
differences in carotid artery wall properties between presumed healthy men and women (van Merode), 571
efficacy of echo-Doppler for the evaluation of renovascular disease (Handa), 1
factors affecting the continuous wave Doppler spectrum for the diagnosis of carotid arterial disease (Morin), 175
flow dynamics in a stenosed carotid bifurcation model-part I: basic velocity measurements (Fei), 21
investigation of Doppler waveforms in porcine renal allografts: Doppler-pathologic correlation (Piccirillo), 111

intra-arterial ultrasonic imaging for recanalization by spark erosion (Bom), 257
intracoronary echo-contrast agents: abnormalities in myocardial function in a normal and reduced coronary perfusion model in dogs (Christensen), 199
quantitative assessment of carotid artery disease by continuous wave and pulsed multigated Doppler-prospective comparison with angiography (Sillesen), 641
resistance index, blood flow velocity and resistance-area product in the cerebral arteries of very low birth weight infants during the first week of life (Evans), 103
stability of flow patterns in the *in vivo* post-stenotic velocity field (Hutchison), 269
the diagnosis of minor to moderate atherosclerotic lesions in the carotid artery bifurcation by means of spectral broadening combined with the direct detection of flow disturbances using a multi-gate pulsed Doppler system (van Merode), 459
the relationship between fetal heart rate and Doppler blood flow velocity waveforms (van den Wijngaard), 593

Artery wall properties
carotid artery wall properties in normotensive and borderline hypertensive subjects of various ages (van Merode), 563
differences in carotid artery wall properties between presumed healthy men and women (van Merode), 571
ultrasound observation on pulsation in human carotid artery lesions (Blankenhorn), 583

Arterial stenosis
automated calculation of stenosis diameters from the width of the velocity jet with the use of a multi-gate pulsed Doppler system (de Knecht), 575
factors affecting the continuous wave Doppler spectrum for the diagnosis of carotid arterial disease (Morin), 175
quantitative assessment of carotid artery disease by continuous wave and pulsed multigated Doppler-prospective comparison with angiography (Sillesen), 641
stability of flow patterns in the *in vivo* post-stenotic velocity field (Hutchison), 269
the diagnosis of minor to moderate atherosclerotic lesions in the carotid artery bifurcation by means of spectral broadening combined with the direct detection of flow disturbances using a multi-gate pulsed Doppler system (van Merode), 459
Asztely, M. S., see Parker, K. J.

Attenuation
comparison of theoretical scattering results and ultrasonic data from clinical liver examinations (Lizzi), 377
correlation of ultrasonic attenuation with pathologic fat and fibrosis in liver disease (Lin), 729
in vivo acoustic attenuation in liver: correlations with blood tests and histology (Duerinckx), 405
in vivo and *in vitro* ultrasound beam distortion measurements of a large aperture and a conventional aperture focussed transducer (Moshfeghi), 415
in vivo measurements of ultrasound attenuation in normal or diseased liver (Parker), 127

measurement of ultrasonic non-linear parameter in excised fat tissues (Errabolu), 137
on estimating the number density of random scatterers from backscattered acoustic signals (Sleefe), 709
ultrasound attenuation estimation using the LMSE filters and the median filter (Jang), 51

Audiology
use of amplitude-modulated focused ultrasound for diagnosis of hearing disorders (Tsirulnikov), 277
Aufrichtig, D., see Duerinckx, A.

B

B-mode imaging
anisotropic ultrasonic backscatter from the renal cortex (Rubin), 507
intra-arterial ultrasonic imaging for recanalization by spark erosion (Bom), 257
Bacon, D. R., see Duck, F. A.
Bahn, R. C., see Errabolu, R. L.
Bamber, J. C., see Tristam, M.
Barbosa, D. C., see Tristam, M.
Barnes, C., see Evans, J. A.
Barnett, S. B., Miller, M. W., Cox, C and Carstensen, E. L.: increased sister chromatid exchanges in Chinese hamster ovary cells exposed to high intensity pulsed ultrasound, 397
Barracca, A., Campisi, G., Loi, L., Altieri, P., Murgia, G. M., Farci, G., Catani, W. and Diaz, G.: estimation of the renal weight by routine echographic measurements, L225
Bascom, P. A. J., see Mo, L. Y. L.

Beam distortion
in vivo and *in vitro* ultrasound beam distortion measurements of a large aperture and a conventional aperture focussed transducer (Moshfeghi), 415

Beam profile
in vivo and *in vitro* ultrasound beam distortion measurements of a large aperture and a conventional aperture focussed transducer (Moshfeghi), 415
intra-arterial ultrasonic imaging for recanalization by spark erosion (Bom), 257
on estimating the number density of random scatterers from backscattered acoustic signals (Sleefe), 709
protein synthesis by neuroblastoma cells is enhanced by exposure to burst-mode ultrasound cavitation (Edmonds), 219
testing for the teratogenicity of pulsed ultrasound in mice (Child), 493
the effect of therapeutic ultrasound on calcium uptake in fibroblasts (Mortimer), 499
Billian, C., see Fei, D. Y.

Bioeffects
biological effects of shock waves: kidney damage by shock waves in dogs —dose dependence (Delius), 117
biological effects of shock waves: kidney haemorrhage by shock waves in dogs-administration rate dependence (Delius), 689

cell membrane damage by ultrasound at different cell concentrations (Ellwart), 43
epidemiology of human exposure to ultrasound: a critical review (Ziskin), 91
exposure levels for ultrasonic cavitation in the mouse neonate (Lee), 735
increased sister chromatid exchanges in Chinese hamster ovary cells exposed to high intensity pulsed ultrasound (Barnett), 397
murine ovulatory resonse to ultrasound exposure and its gynecological relevance (Gates), 485
potential hazards of the dental descaler (Walmsley), 15
testing for the teratogenicity of pulsed ultrasound in mice (Child), 493
the effect of therapeutic ultrasound on calcium uptake in fibroblasts (Mortimer), 499
the influence of hematocrit on hemolysis by ultrasonically activated gas-filled micropores (Miller), 293
ultrasound and spermatogenesis in the rat (Urry), 213
ultrasonic and histopathological correlations of deep focal hepatic lesions induced by stereotaxic Nd-YAG laser applications (Godlewski), 287

Biological hazard
biological effects of shock waves: kidney damage by shock waves in dogs-dose dependence (Delius), 117
biological effects of shock waves: kidney haemorrhage by shock waves in dogs-administration rate dependence (Delius), 689
epidemiology of human exposure to ultrasound: a critical review (Ziskin), 91
exposure levels for ultrasonic cavitation in the mouse neonate (Lee), 735
potential hazards of the dental descaler (Walmsley), 15
protein synthesis by neuroblastoma cells is enhanced by exposure to burst-mode ultrasound cavitation (Edmonds), 219
the role of ultrasound in the early diagnosis of fetal structural defects following maternal anticonvulsant therapy (Wladimiroff), 657
ultrasound and spermatogenesis in the rat (Urry), 213
Blankenhorn, D. H., Chin, H. P., Conover, D. J. and Nessim, S. A.: ultrasound observation on pulsation in human carotid artery lesions, 583

Blood
cell membrane damage by ultrasound at different cell concentrations (Ellwart), 43

Blood flow
a transmission line modelling approach to the interpretation of uterine Doppler waveforms (Mo), 365
age dependence of the flow velocity in the basal cerebral arteries-a transcranial Doppler ultrasound study (Grolimund), 191
antenatal fetal blood flow in the descending aorta and in the umbilical vein and their ratio in normal pregnancy (Chen), 263,
automated calculation of stenosis diameters from the width of the velocity jet with the use of a multi-gate pulsed Doppler system (de Knecht), 575
carbon dioxide reactivity of the blood flow in human basilar artery estimated by the transcranial Doppler method in normal men: a comparison with that of the middle cerebral artery (Ogawa), 479
comparison of four digital maximum frequency estimators for Doppler ultrasound (Mo), 355
conventional and color Doppler in the assessment of fetal and maternal circulation (Kurjak), 337

detection of neovascular signals in a 3 day Walker 256 rat carcinoma by CW Doppler ultrasound (Ramos), 123
factors affecting the continuous wave Doppler spectrum for the diagnosis of carotid arterial disease (Morin), 175
quantitative assessment of carotid artery disease by continuous wave and pulsed multigated Doppler-prospective comparison with angiography (Sillesen), 641
resistance index, blood flow velocity and resistance-area product in the cerebral arteries of very low birth weight infants during the first week of life (Evans), 103
stability of flow patterns in the *in vivo* post-stenotic velocity field (Hutchison), 269
the relationship between fetal heart rate and Doppler blood flow velocity waveforms (van den Wijngaard), 593

Blood pressure gradient
changes in Doppler waveforms can predict pressure reduction across internal carotid artery stenoses (Sillesen), 649

Blood test
in vivo acoustic attenuation in liver: correlations with blood tests and histology (Duerinckx), 405
Bom, N., Slager, C. J., van Egmond, F. C., Lancee, C. T. and Serruys, P. W.: intra-arterial ultrasonic imaging for recanalization by spark erosion, 257

Book Reviews
sonomammography an atlas of comparative breast ultrasound; Guyer and Dewbury. (Dempsey), 513
ultrasound teaching cases-volume I, second edition; Meire, Dewbury and Cosgrove. (Bree), 513
transvaginal sonography; Timor-Tritsch. (Wladimiroff), 743
the fetus as a patient; Kurjak. (Meis), 744
diagnostic imaging in pediatrics; Gordon. (Sumner), 744
Bourgeois, J. M., see Godlewski, G.

Bovine serum albumin
the effect of solvation on the ultrasonic absorption of bovine serum albumin solutions (Evans), 299

Breast
in vivo and *in vitro* ultrasound beam distortion measurements of a large aperture and a conventional aperture focussed transducer (Moshfeghi), 415
measurement of ultrasonic non-linear parameter in excised fat tissues (Errabolu), 137
proceedings of the fifth international congress on the ultrasonic examination of the breast, New Orleans, October 1987; UMB Volume 14 supplement 1:
economics of breast examination in the United States (Holden), 1
fine needle aspiration biopsy of the breast using ultrasound techniques-superficial localization and direct visualization (Harper), 5
the role of ultrasound guided needle aspiration of breast masses (Hogg), 13
ultrasonographic localization of non-palpable breast masses (Schwartz), 23

sonographic findings following conservative surgery and irradiation for breast carcinoma (Leucht), 27
the importance of resolution in the clinical application of breast sonography (Dempsey), 43
direct-contact B-scan sonomammography-an aid to X-ray mammography (Guyer), 49
dynamic tests in real-time breast echography (Ueno), 53
diagnostic value of different interpretative criteria in real-time sonography of the breast (Leucht), 59
differentiation of solid breast tumors on the basis of their primary echographic characteristics as revealed by real-time scanning of the uncompressed breast (Vlaisavljevic), 75
quantitative evaluation of real-time ultrasound features of the breast (Bamber), 81
echo-histological "acino-ductal analysis". preliminary results (Teboul), 89
dynamic morpho-cyto-echography and the echographic galactoscopy endo-ductal sample:intrinsic and extrinsic markers in the detection of breast cancers (Feige), 97
role of direct contact, real-time breast ultrasound: one year's experience (Lee), 109
ultrasound breast examination of asymptomatic patients with normal but radiodense mammograms (Rothschild), 113
combining imaging and vascularity assessment of breast lesions (Jellins), 121
duplex sonography of the breast (Jackson), 131
size of breast cancer on ultrasonography, cut-suface of resected specimen and palpation (Nishimura), 139
variation of transducer frequency output and reciever band-pass characteristics for improved detection and image characterisation of solid breast masses (Kelly-Fry), 143
in vitro estimation and imaging of attenuation coefficients and instantaneous frequency for breast tissue characterization (Kubota), 163
can microcalcifications located within breast carcinomas be detected by ultrasound imaging? (Kasumi), 175
anthropomorphic phantoms for assessing systems used in ultrasound imaging of the compressed breast (Madsen), 183
ultrasound artifacts affecting the diagnosis of breast masses (Kimme-Smith), 203
causes of shadowing in breast sonography (Kossoff), 211
international trends in the economics of breast examination (Kobayashi), 217
benefits of bi-plane scanning (Hensley), 231
contact B-scan ultrasound of the breast (Lanani), 235
representative breast ultrasound images (Lex), 243

Breast fat
measurement of ultrasonic non-linear parameter in excised fat tissues (Errabolu), 137
Brendel, W., see Delius, M.
Brettel, H., see Ellwart, J. W.
Burns, P. N., see Piccirillo, M.

Burst-mode ultrasound
increased sister chromatid exchanges in Chinese hamster ovary cells exposed to high intensity pulsed ultrasound (Barnett), 397

murine ovulatory resonse to ultrasound exposure and its gynecological relevance (Gates), 485
protein synthesis by neuroblastoma cells is enhanced by exposure to burst-mode ultrasound cavitation (Edmonds), 219
testing for the teratogenicity of pulsed ultrasound in mice (Child), 493
the effect of therapeutic ultrasound on calcium uptake in fibroblasts (Mortimer), 499

C

Calcium transport
the effect of therapeutic ultrasound on calcium uptake in fibroblasts (Mortimer), 499

Calibration
cell membrane damage by ultrasound at different cell concentrations (Ellwart), 43
Campisi, G., see Barracca, A.

Canine arteries
stability of flow patterns in the *in vivo* post-stenotic velocity field (Hutchison), 269

Carbon dioxide reactivity
carbon dioxide reactivity of the blood flow in human basilar artery estimated by the transcranial Doppler method in normal men: a comparison with that of the middle cerebral artery (Ogawa), 479

Cardiology
intracoronary echo-contrast agents: abnormalities in myocardial function in a normal and reduced coronary perfusion model in dogs (Christensen), 199

Carotid artery
carotid artery wall properties in normotensive and borderline hypertensive subjects of various ages (van Merode), 563
changes in Doppler waveforms can predict pressure reduction across internal carotid artery stenoses (Sillesen), 649
chromaticity-coded Doppler blood velocity sonagrams: preliminary observations (Kontis), 473
differences in carotid artery wall properties between presumed healthy men and women (van Merode), 571
factors affecting the continuous wave Doppler spectrum for the diagnosis of carotid arterial disease (Morin), 175
flow dynamics in a stenosed carotid bifurcation model-part I: basic velocity measurements (Fei), 21
flow dynamics in a stenosed carotid bifurcation model-part II: derived indices (Rittgers), 33
quantitative assessment of carotid artery disease by continuous wave and pulsed multigated Doppler-prospective comparison with angiography (Sillesen), 641
the diagnosis of minor to moderate atherosclerotic lesions in the carotid artery bifurcation by means of spectral broadening combined with the direct detection of flow disturbances using a multi-gate pulsed Doppler system (van Merode), 459
the relationship between fetal heart rate and Doppler blood flow velocity waveforms (van den Wijngaard), 593
ultrasound observation on pulsation in human carotid artery lesions (Blankenhorn), 583

Carson, P. L., see Rubin, J. M.
Carstensen, E. L., see Barnett, S. B.
Carstensen, E. L., see Child. S. Z.
Carstensen, E. L., see Gates, A. H.
Carstensen, E. L., see Urry, R. L.
Catani, W., see Barracca, A.

Catheter mounted transducer
intra-arterial ultrasonic imaging for recanalization by spark erosion (Born), 257

Cavitation
a cavitation and free radical dosimeter for ultrasound (McLean), 59
biological effects of shock waves: kidney haemorrhage by shock waves in dogs-administration rate dependence (Delius), 689
cell membrane damage by ultrasound at different cell concentrations (Ellwart), 43
exposure levels for ultrasonic cavitation in the mouse neonate (Lee), 735
the influence of hematocrit on hemolysis by ultrasonically activated gas-filled micropores (Miller), 293
potential hazards of the dental descaler (Walmsley), 15
ultrasound and spermatogenesis in the rat (Urry), 213

Cell density
cell membrane damage by ultrasound at different cell concentrations (Ellwart), 43

Cell membrane
cell membrane damage by ultrasound at different cell concentrations (Ellwart), 43
the effect of therapeutic ultrasound on calcium uptake in fibroblasts (Mortimer), 499

Cerebral arteries
age dependence of the flow velocity in the basal cerebral arteries-a transcranial Doppler ultrasound study (Grolimund), 191
carbon dioxide reactivity of the blood flow in human basilar artery estimated by the transcranial Doppler method in normal men: a comparison with that of the middle cerebral artery (Ogawa), 479
resistance index, blood flow velocity and resistance-area product in the cerebral arteries of very low birth weight infants during the first week of life (Evans), 103

Cerebral hypoperfusion
changes in Doppler waveforms can predict pressure reduction across internal carotid artery stenoses (Sillesen), 649
Chambers, S. E., see Hoskins, P. R.
Chang, F. M., see Chen, H. Y.

Characterization
an evaluation of the use of texture measurements for the tissue characterisation of ultrasonic images of *in vivo* human placentae (Morris), 387
anisotropic ultrasonic backscatter from the renal cortex (Rubin), 507
application of Fourier analysis to clinical study of patterns of tissue movement (Tristam), 695

comparison of theoretical scattering results and ultrasonic data from clinical liver examinations (Lizzi), 377
correlation of ultrasonic attenuation with pathologic fat and fibrosis in liver disease (Lin), 729
detection of neovascular signals in a 3 day Walker 256 rat carcinoma by CW Doppler ultrasound (Ramos), 123
in vivo acoustic attenuation in liver: correlations with blood tests and histology (Duerinckx), 405
in vivo measurements of ultrasound attenuation in normal or diseased liver (Parker), 127
measurement of ultrasonic non-linear parameter in excised fat tissues (Errabolu), 137
on estimating the number density of random scatterers from backscattered acoustic signals (Sleefe), 709
ultrasound observation on pulsation in human carotid artery lesions (Blankenhorn), 583
wave space interpretation of scattered ultrasound (Lerner), 97
Chen, H. Y., Chang, F. M., Huang, H. C., Hsieh, F. J. and Lu, C. C.: antenatal fetal blood flow in the descending aorta and in the umbilical vein and their ratio in normal pregnancy, 263

Chicken fat
measurement of ultrasonic non-linear parameter in excised fat tissues (Errabolu), 137
Child. S. Z., Carstensen, E. L., Gates, A. H. and Hall, W. J.: testing for the teratogenicity of pulsed ultrasound in mice, 493
Child. S. Z., see Gates, A. H.
Child, S. A., see Urry, R. L.
Chin, H. P., see Blankenhorn, D. H.
Christensen, C. W., Reeves, W. C. and Holt, G. W.: intracoronary echo-contrast agents: abnormalities in myocardial function in a normal and reduced coronary perfusion model in dogs, 199

Chromaticity
a new method of encoding and displaying audio Doppler-shift signals: the chromagram (Kontis), 465
chromaticity-coded Doppler blood velocity sonagrams: preliminary observations (Kontis), 473

CIE colorimetric system
a new method of encoding and displaying audio Doppler-shift signals: the chromagram (Kontis), 465
Clarkson, D. McG. and Evans, J. A.: flexible software for the processing of obstetric ultrasound scan and related information, 611
Cobbold, R. S. C., see Mo, L. Y. L.
Cobbold, R. S. C., see Vaitkus, P. J.
Cole-Beuglet, C., see Duerinckx, A.

Color coded Doppler
conventional and color Doppler in the assessment of fetal and maternal circulation (Kurjak), 337

Compliance
application of Fourier analysis to clinical study of patterns of tissue movement (Tristam), 695
carotid artery wall properties in normotensive and borderline hypertensive subjects of various ages (van Merode), 563

differences in carotid artery wall properties between presumed healthy men and women (van Merode), 571
ultrasound observation on pulsation in human carotid artery lesions (Blankenhorn), 583

Computing
flexible software for the processing of obstetric ultrasound scan and related information (Clarkson), 611
Conover, D. J., see Blankenhorn, D. H.

Contrast
intracoronary echo-contrast agents: abnormalities in myocardial function in a normal and reduced coronary perfusion model in dogs (Christensen), 199

Co-occurrence matrix
an evaluation of the use of texture measurements for the tissue characterisation of ultrasonic images of *in vivo* human placentae (Morris), 387

Coronary artery
intracoronary echo-contrast agents: abnormalities in myocardial function in a normal and reduced coronary perfusion model in dogs (Christensen), 199
Cosgrove, D. O., see Tristam, M.
Cox, C., see Barnett, S. B.

D

Daniels, O., see de Knecht, S.

Deafness
use of amplitude-modulated focused ultrasound for diagnosis of hearing disorders (Tsirulnikov), 277
Delius, M., Jordan, M., Eizenhoefer, H., Marlinghaus, E., Heine, G., Liebich, H-G. and Brendel, W.: biological effects of shock waves: kidney haemorrhage by shock waves in dogs- administration rate dependence, 689
Delius, M., Enders, G., Xuan, Z., Liebich, H-G. and Brendel, W.: biological effects of shock waves: kidney damage by shock waves in dogs-dose dependence, 117
Delius, M. and Brendel, W.: a model of extracorporeal shock wave action: tandem action of shock waves, L515

Dental plaque
applications of ultrasound in dentistry (Walmsley), 7

Dentistry
applications of ultrasound in dentistry (Walmsley), 7
potential hazards of the dental descaler (Walmsley), 15

Descaler
applications of ultrasound in dentistry (Walmsley), 7
potential hazards of the dental descaler (Walmsley), 15
Diaz, G., see Barracca, A.

Dicrotic notch
a transmission line modelling approach to the interpretation of uterine Doppler waveforms (Mo), 365

Digital algorithms
a comparative study and assessment of Doppler ultrasound spectral techniques part I: estimation methods (Vaitkus), 661
a comparative study and assessment of Doppler ultrasound spectral techniques part II: methods and results (Vaitkus), 673
a new method of encoding and displaying audio Doppler-shift signals: the chromagram (Kontis), 465
comparison of four digital maximum frequency estimators for Doppler ultrasound (Mo), 355

Discrete Fourier transform
a comparative study and assessment of Doppler ultrasound spectral techniques part I: estimation methods (Vaitkus), 661
a comparative study and assessment of Doppler ultrasound spectral techniques part II: methods and results (Vaitkus), 673
a new method of encoding and displaying audio Doppler-shift signals: the chromagram (Kontis), 465

Distensibility
carotid artery wall properties in normotensive and borderline hypertensive subjects of various ages (van Merode), 563
ultrasound observation on pulsation in human carotid artery lesions (Blankenhorn), 583

Dog
biological effects of shock waves: kidney haemorrhage by shock waves in dogs-administration rate dependence (Delius), 689

Doppler
a comparative study and assessment of Doppler ultrasound spectral techniques part I: estimation methods (Vaitkus), 661
a comparative study and assessment of Doppler ultrasound spectral techniques part II: methods and results (Vaitkus), 673
a new method of encoding and displaying audio Doppler-shift signals: the chromagram (Kontis), 465
a transmission line modelling approach to the interpretation of uterine Doppler waveforms (Mo), 365
age dependence of the flow velocity in the basal cerebral arteries-a transcranial Doppler ultrasound study (Grolimund), 191
antenatal fetal blood flow in the descending aorta and in the umbilical vein and their ratio in normal pregnancy (Chen), 263
carbon dioxide reactivity of the blood flow in human basilar artery estimated by the transcranial Doppler method in normal men: a comparison with that of the middle cerebral artery (Ogawa), 479
changes in Doppler waveforms can predict pressure reduction across internal carotid artery stenoses (Sillesen), 649
chromaticity-coded Doppler blood velocity sonagrams: preliminary observations (Kontis), 473
comparison of four digital maximum frequency estimators for Doppler ultrasound (Mo), 355
conventional and color Doppler in the assessment of fetal and maternal circulation (Kurjak), 337
detection of neovascular signals in a 3 day Walker 256 rat carcinoma by CW Doppler ultrasound (Ramos), 123

determination of the presence of fetal apnoea using umbilical artery and umbilical vein Doppler waveforms (Hoskins), 589
differences in carotid artery wall properties between presumed healthy men and women (van Merode), 571
efficacy of echo-Doppler for the evaluation of renovascular disease (Handa), 1
factors affecting the continuous wave Doppler spectrum for the diagnosis of carotid arterial disease (Morin), 175
flow dynamics in a stenosed carotid bifurcation model-part I: basic velocity measurements (Fei), 21
flow dynamics in a stenosed carotid bifurcation model-part II: derived indices (Rittgers), 33
investigation of Doppler waveforms in porcine renal allografts: Doppler-pathologic correlation (Piccirillo), 111
maximum likelihood frequency tracking of the audio pulsed Doppler ultrasound signal using a Kalman filter (Talhami), 599
quantitative assessment of carotid artery disease by continuous wave and pulsed multigated Doppler-prospective comparison with angiography (Sillesen), 641
resistance index, blood flow velocity and resistance-area product in the cerebral arteries of very low birth weight infants during the first week of life (Evans), 103
stability of flow patterns in the *in vivo* post-stenotic velocity field (Hutchison), 269
the diagnosis of minor to moderate atherosclerotic lesions in the carotid artery bifurcation by means of spectral broadening combined with the direct detection of flow disturbances using a multi-gate pulsed Doppler system (van Merode), 459
the relationship between fetal heart rate and Doppler blood flow velocity waveforms (van den Wijngaard), 593

Dosimetry
a cavitation and free radical dosimeter for ultrasound (McLean), 59
Dougherty, K. A., see Urry, R. L.
Duck, F. A. and Bacon, D. R.: a fundamental criticism of hydrophone-in-water exposure measurements, L305
Duerinckx, A., Rosenberg, K., Hoefs, J., Aufrichtig, D., Cole-Beuglet, C., Kanel, G., Lottenberg, S. and Ferrari, L. A.: *in vivo* acoustic attenuation in liver: correlations with blood tests and histology, 405

Duplex scanning
antenatal fetal blood flow in the descending aorta and in the umbilical vein and their ratio in normal pregnancy (Chen), 263
conventional and color Doppler in the assessment of fetal and maternal circulation (Kurjak), 337
efficacy of echo-Doppler for the evaluation of renovascular disease (Handa), 1
resistance index, blood flow velocity and resistance-area product in the cerebral arteries of very low birth weight infants during the first week of life (Evans), 103

Dye exclusion
cell membrane damage by ultrasound at different cell concentrations (Ellwart), 43
Dyson, M., see Mortimer, A. J.

E

Echo-cardiography
intracoronary echo-contrast agents: abnormalities in myocardial function in a normal and reduced coronary perfusion model in dogs (Christensen), 199

Echo-contrast
anisotropic ultrasonic backscatter from the renal cortex (Rubin), 507
intracoronary echo-contrast agents: abnormalities in myocardial function in a normal and reduced coronary perfusion model in dogs (Christensen), 199
Edmonds, P. D. and Ross, P.: protein synthesis by neuroblastoma cells is enhanced by exposure to burst-mode ultrasound cavitation, 219
van Egmond, F. C., see Bom, N.
Eizenhoefer, H., see Delius, M.
Eledjam, J. J., see Godlewski, G.
Ellwart, J. W., Brettel, H. and Kober, L. O.: cell membrane damage by ultrasound at different cell concentrations, 43
Enders, G., see Delius, M.

Epidemiology
epidemiology of human exposure to ultrasound: a critical review (Ziskin), 91

Erosion, spark
intra-arterial ultrasonic imaging for recanalization by spark erosion (Bom), 257
Errabolu, R. L., Sehgal, C. M., Bahn, R. C. and Greenleaf, J. F.: measurement of ultrasonic non-linear parameter in excised fat tissues, 137

Errors
antenatal fetal blood flow in the descending aorta and in the umbilical vein and their ratio in normal pregnancy (Chen), 263
comparison of four digital maximum frequency estimators for Doppler ultrasound (Mo), 355
conventional and color Doppler in the assessment of fetal and maternal circulation (Kurjak), 337
factors affecting the continuous wave Doppler spectrum for the diagnosis of carotid arterial disease (Morin), 175
in vivo and *in vitro* ultrasound beam distortion measurements of a large aperture and a conventional aperture focussed transducer (Moshfeghi), 415
maximum likihood frequency tracking of the audio pulsed Doppler ultrasound signal using a Kalman filter (Talhami), 599

Erythrocytes
cell membrane damage by ultrasound at different cell concentrations (Ellwart), 43
the influence of hematocrit on hemolysis by ultrasonically activated gas-filled micropores (Miller), 293
Etani, H., see Handa, N.
Etani, H., see Ogawa, S.
Evans, D. H., Levene, M. I., Shortland, D. B. and Archer, L. N. J.: resistance index, blood flow velocity and resistance-area product in the cerebral arteries of very low birth weight infants during the first week of life, 103 (erratum 309)

Evans, J. A., Barnes, C. and Lewis, T. J.: the effect of solvation on the ultrasonic absorption of bovine serum albumin solutions, 299
Evans, J. A., see Clarkson, D. McG.

Extracorporeal lithotripsy
biological effects of shock waves: kidney damage by shock waves in dogs-dose dependence (Delius), 117
biological effects of shock waves: kidney haemorrhage by shock waves in dogs-administration rate dependence (Delius), 689
van Eyck, J., see van den Wijngaard, J. A. G. W.

F

f-number
in vivo and *in vitro* ultrasound beam distortion measurements of a large aperture and a conventional aperture focussed transducer (Moshfeghi), 415
Farci, G., see Barracca, A.

Fat
correlation of ultrasonic attenuation with pathologic fat and fibrosis in liver disease (Lin), 729
in vivo acoustic attenuation in liver: correlations with blood tests and histology (Duerinckx), 405
in vivo measurements of ultrasound attenuation in normal or diseased liver (Parker), 127
measurement of ultrasonic non-linear parameter in excised fat tissues (Errabolu), 137
Fei, D. Y., Billian, C. and Rittgers, S. E.: flow dynamics in a stenosed carotid bifurcation model-part I: basic velocity measurements, 21
Fei, D. Y., see Rittgers, S. E.
Feleppa, E. J., see Lizzi, F. L.
Fernandez, F., see Urry, R. L.
Fernandez, L. A., see Ramos, I.
Ferrari, L. A., see Duerinckx, A.

Fertilisation in vitro
murine ovulatory resonse to ultrasound exposure and its gynecological relevance (Gates), 485

Fetal blood flow
a transmission line modelling approach to the interpretation of uterine Doppler waveforms (Mo), 365
antenatal fetal blood flow in the descending aorta and in the umbilical vein and their ratio in normal pregnancy (Chen), 263
conventional and color Doppler in the assessment of fetal and maternal circulation (Kurjak), 337
determination of the presence of fetal apnoea using umbilical artery and umbilical vein Doppler waveforms (Hoskins), 589

Fetal breathing
determination of the presence of fetal apnoea using umbilical artery and umbilical vein Doppler waveforms (Hoskins), 589

Fetal death
testing for the teratogenicity of pulsed ultrasound in mice (Child), 493

Fetal heart rate
the relationship between fetal heart rate and Doppler blood flow velocity waveforms (van den Wijngaard), 593

Fetal malformations
testing for the teratogenicity of pulsed ultrasound in mice (Child), 493
the role of ultrasound in the early diagnosis of fetal structural defects following maternal anticonvulsant therapy (Wladimiroff), 657

Fetal measurements
antenatal fetal blood flow in the descending aorta and in the umbilical vein and their ratio in normal pregnancy (Chen), 263
conventional and color Doppler in the assessment of fetal and maternal circulation (Kurjak), 337
determination of the presence of fetal apnoea using umbilical artery and umbilical vein Doppler waveforms (Hoskins), 589
flexible software for the processing of obstetric ultrasound scan and related information (Clarkson), 611
the relationship between fetal heart rate and Doppler blood flow velocity waveforms (van den Wijngaard), 593
the role of ultrasound in the early diagnosis of fetal structural defects following maternal anticonvulsant therapy (Wladimiroff), 657

Fibroblasts
the effect of therapeutic ultrasound on calcium uptake in fibroblasts (Mortimer), 499

Fibrosis
correlation of ultrasonic attenuation with pathologic fat and fibrosis in liver disease (Lin), 729

Flow cytometry
cell membrane damage by ultrasound at different cell concentrations (Ellwart), 43

Flow disturbance indices
age dependence of the flow velocity in the basal cerebral arteries-a transcranial Doppler ultrasound study (Grolimund), 191
antenatal fetal blood flow in the descending aorta and in the umbilical vein and their ratio in normal pregnancy (Chen), 263
changes in Doppler waveforms can predict pressure reduction across internal carotid artery stenoses (Sillesen), 649
conventional and color Doppler in the assessment of fetal and maternal circulation (Kurjak), 337
flow dynamics in a stenosed carotid bifurcation model-part II: derived indices (Rittgers), 33
investigation of Doppler waveforms in porcine renal allografts: Doppler-pathologic correlation (Piccirillo), 111
quantitative assessment of carotid artery disease by continuous wave and pulsed multigated Doppler-prospective comparison with angiography (Sillesen), 641

the diagnosis of minor to moderate atherosclerotic lesions in the carotid artery bifurcation by means of spectral broadening combined with the direct detection of flow disturbances using a multi-gate pulsed Doppler system (van Merode), 459

Flow dynamics
a transmission line modelling approach to the interpretation of uterine Doppler waveforms (Mo), 365
age dependence of the flow velocity in the basal cerebral arteries-a transcranial Doppler ultrasound study (Grolimund), 191
automated calculation of stenosis diameters from the width of the velocity jet with the use of a multi-gate pulsed Doppler system (de Knecht), 575
biological effects of shock waves: kidney damage by shock waves in dogs-dose dependence (Delius), 117
changes in Doppler waveforms can predict pressure reduction across internal carotid artery stenoses (Sillesen), 649
conventional and color Doppler in the assessment of fetal and maternal circulation (Kurjak), 337
flow dynamics in a stenosed carotid bifurcation model-part I: basic velocity measurements (Fei), 21
flow dynamics in a stenosed carotid bifurcation model-part II: derived indices (Rittgers), 33
quantitative assessment of carotid artery disease by continuous wave and pulsed multigated Doppler-prospective comparison with angiography (Sillesen), 641
resistance index, blood flow velocity and resistance-area product in the cerebral arteries of very low birth weight infants during the first week of life (Evans), 103
stability of flow patterns in the *in vivo* post-stenotic velocity field (Hutchison), 269
the relationship between fetal heart rate and Doppler blood flow velocity waveforms (van den Wijngaard), 593

Flow profiles
automated calculation of stenosis diameters from the width of the velocity jet with the use of a multi-gate pulsed Doppler system (de Knecht), 575
carotid artery wall properties in normotensive and borderline hypertensive subjects of various ages (van Merode), 563
quantitative assessment of carotid artery disease by continuous wave and pulsed multigated Doppler-prospective comparison with angiography (Sillesen), 641
stability of flow patterns in the *in vivo* post-stenotic velocity field (Hutchison), 269

Flow visualisation
conventional and color Doppler in the assessment of fetal and maternal circulation (Kurjak), 337
Flye, M. W., see Piccirillo, M.

Focal hepatic lesion
ultrasonic and histopathological correlations of deep focal hepatic lesions induced by stereotaxic Nd-YAG laser applications (Godlewski), 287

Focused ultrasound
use of amplitude-modulated focused ultrasound for diagnosis of hearing disorders (Tsirulnikov), 277
Fortune, K. L., see Ramos, I.

Fourier transform
a comparative study and assessment of Doppler ultrasound spectral techniques part I: estimation methods (Vaitkus), 661
a comparative study and assessment of Doppler ultrasound spectral techniques part II: methods and results (Vaitkus), 673
application of Fourier analysis to clinical study of patterns of tissue movement (Tristam), 695

Free radicals
a cavitation and free radical dosimeter for ultrasound (McLean), 59
Frizzell, L. A., see Lee, C. S.
Fukunaga, R., see Handa, N.

G

Gas body activation
the influence of hematocrit on hemolysis by ultrasonically activated gas-filled micropores (Miller), 293
Gates, A. H., Carstensen, E. L., Child. S. Z., Hall, W. J. and Maczynski, C. L.: murine ovulatory resonse to ultrasound exposure and its gynecological relevance, 485
Gates, A. H., see Child. S. Z.
Gavrilov, L. R., see Tsirulnikov, E. M.
Gersuni, G. V., see Tsirulnikov, E. M.
Godlewski, G., Bourgeois, J. M., Sambuc, P., Gouze, C., Ould-Said, H., Eledjam, J. J., Rouy, S. and Pignodel, C.: ultrasonic and histopathological correlations of deep focal hepatic lesions induced by stereotaxic Nd-YAG laser applications, 287
Gosling, R. G., see Kontis, S.
Gouze, C., see Godlewski, G.

Graafian follicle
murine ovulatory resonse to ultrasound exposure and its gynecological relevance (Gates), 485
Greenleaf, J. F., see Errabolu, R. L.
Grolimund, P. and Seiler, R. W.: age dependence of the flow velocity in the basal cerebral arteries-a transcranial Doppler ultrasound study, 191

Gynaecological ultrasonography
murine ovulatory resonse to ultrasound exposure and its gynecological relevance (Gates), 485

H

Haddad, N. G., see Hoskins, P. R.
Hall, W. J., see Child. S. Z.
Hall, W. J., see Gates, A. H.

Hamster
increased sister chromatid exchanges in Chinese hamster ovary cells exposed to high intensity pulsed ultrasound (Barnett), 397

Handa, N., Fukunaga, R., Etani, H., Yoneda, S., Kimura, K. and Kamada, T.: efficacy of echo-Doppler for the evaluation of renovascular disease, 1
Handa, N., see Ogawa, S.
Hansen, H. J. B., see Sillesen, H.
Heine, G., see Delius, M.

Hemolysis
the influence of hematocrit on hemolysis by ultrasonically activated gas-filled micropores (Miller), 293

Hepatic fat
in vivo acoustic attenuation in liver: correlations with blood tests and histology (Duerinckx), 405
measurement of ultrasonic non-linear parameter in excised fat tissues (Errabolu), 137

Hepatic fibrosis
in vivo acoustic attenuation in liver: correlations with blood tests and histology (Duerinckx), 405
Hick, P. J. J., see van Merode, T.
Hill, C. R., see Tristam, M.

Hind limb paralysis
exposure levels for ultrasonic cavitation in the mouse neonate (Lee), 735

Histology
biological effects of shock waves: kidney damage by shock waves in dogs-dose dependence (Delius), 117
biological effects of shock waves: kidney haemorrhage by shock waves in dogs-administration rate dependence (Delius), 689
in vivo acoustic attenuation in liver: correlations with blood tests and histology (Duerinckx), 405
investigation of Doppler waveforms in porcine renal allografts: Doppler-pathologic correlation (Piccirillo), 111
on estimating the number density of random scatterers from backscattered acoustic signals (Sleefe), 709
ultrasonic and histopathological correlations of deep focal hepatic lesions induced by stereotaxic Nd-YAG laser applications (Godlewski), 287

History
neurosonology pioneers (White), 541
Hoefs, J., see Duerinckx, A.
Hoeks, A. P. G., see de Knecht, S.
Hoeks, A. P. G., see van Merode, T.
Holt, G. W., see Christensen, C. W.
Hopman, J. C. W., see de Knecht, S.
Hoskins, P. R., McDicken, W. N., Johnstone, F. D., White, G., Haddad, N. G. and Chambers, S. E.: determination of the presence of fetal apnoea using umbilical artery and umbilical vein Doppler waveforms, 589
Hsieh, F. J., see Chen, H. Y.
Huang, H. C., see Chen, H. Y.
Hui, J., see Lizzi, F. L.

Human basilar artery
carbon dioxide reactivity of the blood flow in human basilar artery estimated by the transcranial Doppler method in normal men: a comparison with that of the middle cerebral artery (Ogawa), 479

Human chorionic gonadotropin
murine ovulatory resonse to ultrasound exposure and its gynecological relevance (Gates), 485

Human exposure
epidemiology of human exposure to ultrasound: a critical review (Ziskin), 91
Hutchison, K. J. and Karpinski, E.: stability of flow patterns in the *in vivo* post-stenotic velocity field, 269

Hydration
the effect of solvation on the ultrasonic absorption of bovine serum albumin solutions (Evans), 299

Hypertension
an evaluation of the use of texture measurements for the tissue characterisation of ultrasonic images of *in vivo* human placentae (Morris), 387
carotid artery wall properties in normotensive and borderline hypertensive subjects of various ages (van Merode), 563
efficacy of echo-Doppler for the evaluation of renovascular disease (Handa), 1

Hyperthermia
ultrasonic and histopathological correlations of deep focal hepatic lesions induced by stereotaxic Nd-YAG laser applications (Godlewski), 287

I

Imaging
anisotropic ultrasonic backscatter from the renal cortex (Rubin), 507
application of Fourier analysis to clinical study of patterns of tissue movement (Tristam), 695
in vivo and *in vitro* ultrasound beam distortion measurements of a large aperture and a conventional aperture focussed transducer (Moshfeghi), 415
the role of ultrasound in the early diagnosis of fetal structural defects following maternal anticonvulsant therapy (Wladimiroff), 657

Infertility
murine ovulatory resonse to ultrasound exposure and its gynecological relevance (Gates), 485

Intra-arterial ultrasound
intra-arterial ultrasonic imaging for recanalization by spark erosion (Bom), 257

Intra-operative scanning
ultrasonic and histopathological correlations of deep focal hepatic lesions induced by stereotaxic Nd-YAG laser applications (Godlewski), 287

Irradiation, in vitro
a cavitation and free radical dosimeter for ultrasound (McLean), 59
cell membrane damage by ultrasound at different cell concentrations (Ellwart), 43
increased sister chromatid exchanges in Chinese hamster ovary cells exposed to high intensity pulsed ultrasound (Barnett), 397
protein synthesis by neuroblastoma cells is enhanced by exposure to burst-mode ultrasound cavitation (Edmonds), 219
the effect of therapeutic ultrasound on calcium uptake in fibroblasts (Mortimer), 499
the influence of hematocrit on hemolysis by ultrasonically activated gas-filled micropores (Miller), 293

Irradiation, in vivo
biological effects of shock waves: kidney damage by shock waves in dogs —dose dependence (Delius), 117
biological effects of shock waves: kidney haemorrhage by shock waves in dogs-administration rate dependence (Delius), 689
exposure levels for ultrasonic cavitation in the mouse neonate (Lee), 735
murine ovulatory resonse to ultrasound exposure and its gynecological relevance (Gates), 485
testing for the teratogenicity of pulsed ultrasound in mice (Child), 493
ultrasound and spermatogenesis in the rat (Urry), 213

J

Jang, H. S., Lee, M. H. and Park, S. B.: ultrasound attenuation estimation using the LMSE filters and the median filter, 51

Jet flow
automated calculation of stenosis diameters from the width of the velocity jet with the use of a multi-gate pulsed Doppler system (de Knecht), 575
Johnston, K. W., see Morin, J. F.
Johnston, K. W., see Vaitkus, P. J.
Johnstone, F. D., see Hoskins, P. R.
Jordan, M., see Delius, M.

K

Kalman filter
maximum likelihood frequency tracking of the audio pulsed Doppler ultrasound signal using a Kalman filter (Talhami), 599
ultrasound attenuation estimation using the LMSE filters and the median filter (Jang), 51
Kamada, T., see Handa, N
Kamada, T., see Ogawa, S.
Kanel, G., see Duerinckx, A.
Karpinski, E., see Hutchison, K. J.

Kidney
anisotropic ultrasonic backscatter from the renal cortex (Rubin), 507
biological effects of shock waves: kidney damage by shock waves in dogs-dose dependence (Delius), 117
biological effects of shock waves: kidney haemorrhage by shock waves in dogs-administration rate dependence (Delius), 689
efficacy of echo-Doppler for the evaluation of renovascular disease (Handa), 1

investigation of Doppler waveforms in porcine renal allografts: Doppler-pathologic correlation (Piccirillo), 111
Kimura, K., see Handa, N
Kimura, K., see Ogawa, S.
King, D. L., see Lizzi, F. L.
Kitney, R. I., see Talhami, H. E.
de Knecht, S., Hopman, J. C. W., Alsters, J. L. C. M., Daniels, O., Hoeks, A. P. G. and Reneman, R. S.: automated calculation of stenosis diameters from the width of the velocity jet with the use of a multi-gate pulsed Doppler system, 575
Kober, L. O., see Ellwart, J. W.
Kontis, S.: a new method of encoding and displaying audio Doppler-shift signals: the chromagram, 465
Kontis, S., Padayachee, T. S. and Gosling, R. G.: chromaticity-coded Doppler blood velocity sonagrams: preliminary observations, 473
Kurjak, A., Alfirevic, Z. and Miljan, M.: conventional and color Doppler in the assessment of fetal and maternal circulation, 337

L

Lancee, C. T., see Born, N.

Laser
ultrasonic and histopathological correlations of deep focal hepatic lesions induced by stereotaxic Nd-YAG laser applications (Godlewski), 287
Law, Y. F., see Morin, J. F.
Lee, C. S. and Frizzell, L. A.: exposure levels for ultrasonic cavitation in the mouse neonate, 735
Lee, M. H., see Jang, H. S.

Left ventricular function
intracoronary echo-contrast agents: abnormalities in myocardial function in a normal and reduced coronary perfusion model in dogs (Christensen), 199
Lele, P. P., see Sleefe, G. E.
Lerner, R. M. and Waag, R. C.: wave space interpretation of scattered ultrasound, 97
Lerner, R. M., see Parker, K. J.
Lewis, T. J., see Evans, J. A.
Levene, M. I., see Evans, D. H.
Liebich, H-G., see Delius, M.
Lin, T., Ophir, J. and Potter, G.: correlation of ultrasonic attenuation with pathologic fat and fibrosis in liver disease, 729
Lindhout, D., see Wladimiroff, J. W.
Linke, C. A., see Urry, R. L.

Lithotripsy
biological effects of shock waves: kidney damage by shock waves in dogs-dose dependence (Delius), 117
biological effects of shock waves: kidney haemorrhage by shock waves in dogs-administration rate dependence (Delius), 689

Liver
application of Fourier analysis to clinical study of patterns of tissue movement (Tristam), 695

comparison of theoretical scattering results and ultrasonic data from clinical liver examinations (Lizzi), 377
correlation of ultrasonic attenuation with pathologic fat and fibrosis in liver disease (Lin), 729
in vivo acoustic attenuation in liver: correlations with blood tests and histology (Duerinckx), 405
in vivo and *in vitro* ultrasound beam distortion measurements of a large aperture and a conventional aperture focussed transducer (Moshfeghi), 415
in vivo measurements of ultrasound attenuation in normal or diseased liver (Parker), 127
measurement of ultrasonic non-linear parameter in excised fat tissues (Errabolu), 137
ultrasonic and histopathological correlations of deep focal hepatic lesions induced by stereotaxic Nd-YAG laser applications (Godlewski), 287
Lizzi, F. L., King, D. L., Rorke, M. C., Hui, J., Ostromolgilsky, M., Yaremko, M. M., Feleppa, E. J. and Wai, P.: comparison of theoretical scattering results and ultrasonic data from clinical liver examinations, 377
Loi, L., see Barracca, A.
Lottenberg, S., see Duerinckx, A.
Lu, C. C., see Chen, H. Y.

Lutenizing hormone
murine ovulatory resonse to ultrasound exposure and its gynecological relevance (Gates), 485

M

Maczynski, C. L., see Gates, A. H.
Marlinghaus, E., see Delius, M.

Maternal circulation
a transmission line modelling approach to the interpretation of uterine Doppler waveforms (Mo), 365
conventional and color Doppler in the assessment of fetal and maternal circulation (Kurjak), 337
Matsumoto, M., see Ogawa, S.

Maximum frequency estimation
a comparative study and assessment of Doppler ultrasound spectral techniques part I: estimation methods (Vaitkus), 661
a comparative study and assessment of Doppler ultrasound spectral techniques part II: methods and results (Vaitkus), 673
comparison of four digital maximum frequency estimators for Doppler ultrasound (Mo), 355
maximum likelihood frequency tracking of the audio pulsed Doppler ultrasound signal using a Kalman filter (Talhami), 599

Maximum likelihood
a comparative study and assessment of Doppler ultrasound spectral techniques part II: methods and results (Vaitkus), 673
maximum likelihood frequency tracking of the audio pulsed Doppler ultrasound signal using a Kalman filter (Talhami), 599

Maximum velocity analysis
age dependence of the flow velocity in the basal cerebral arteries-a transcranial Doppler ultrasound study (Grolimund), 191
changes in Doppler waveforms can predict pressure reduction across internal carotid artery stenoses (Sillesen), 649
conventional and color Doppler in the assessment of fetal and maternal circulation (Kurjak), 337
determination of the presence of fetal apnoea using umbilical artery and umbilical vein Doppler waveforms (Hoskins), 589
factors affecting the continuous wave Doppler spectrum for the diagnosis of carotid arterial disease (Morin), 175
investigation of Doppler waveforms in porcine renal allografts: Doppler-pathologic correlation (Piccirillo), 111
maximum likelihood frequency tracking of the audio pulsed Doppler ultrasound signal using a Kalman filter (Talhami), 599
quantitative assessment of carotid artery disease by continuous wave and pulsed multigated Doppler-prospective comparison with angiography (Sillesen), 641
resistance index, blood flow velocity and resistance-area product in the cerebral arteries of very low birth weight infants during the first week of life (Evans), 103
McCowan, L. M. E., see Mo, L. Y. L.
McDicken, W. N., see Hoskins, P. R.
McLean, J. R. and Mortimer, A. J.: a cavitation and free radical dosimeter for ultrasound, 59

Median filter
ultrasound attenuation estimation using the LMSE filters and the median filter (Jang), 51

Meiosis
murine ovulatory resonse to ultrasound exposure and its gynecological relevance (Gates), 485
van Merode, T., Hick, P. J. J., Hoeks, A. P. G., Rahn, K. H. and Reneman, R. S.: carotid artery wall properties in normotensive and borderline hypertensive subjects of various ages, 563
van Merode, T., Hick, P. J. J., Hoeks, A. P. G., Smeets, F. M. A. and Reneman, R. S.: differences in carotid artery wall properties between presumed healthy men and women, 571
van Merode, T., Hick, P. J. J., Hoeks, A. P. G. and Reneman, R. S.: the diagnosis of minor to moderate atherosclerotic lesions in the carotid artery bifurcation by means of spectral broadening combined with the direct detection of flow disturbances using a multi-gate pulsed Doppler system, 459

Mesenteric fat
in vivo measurements of ultrasound attenuation in normal or diseased liver (Parker), 127
Meyer, C. R., see Rubin, J. M.
Miljan, M., see Kurjak, A.
Miller, D. L.: the influence of hematocrit on hemolysis by ultrasonically activated gas-filled micropores, 293
Miller, M. W., see Barnett, S. B.

Mo, L. Y. L., Bascom, P. A. J., Ritchie, K. and McCowan, L. M. E.: a transmission line modelling approach to the interpretation of uterine Doppler waveforms, 365
Mo, L. Y. L., Yun, L. C. M. and Cobbold, R. S. C.: comparison of four digital maximum frequency estimators for Doppler ultrasound, 355
Models
a comparative study and assessment of Doppler ultrasound spectral techniques part I: estimation methods (Vaitkus), 661
a comparative study and assessment of Doppler ultrasound spectral techniques part II: methods and results (Vaitkus), 673
a transmission line modelling approach to the interpretation of uterine Doppler waveforms (Mo), 365
application of Fourier analysis to clinical study of patterns of tissue movement (Tristam), 695
automated calculation of stenosis diameters from the width of the velocity jet with the use of a multi-gate pulsed Doppler system (de Knecht), 575
biological effects of shock waves: kidney damage by shock waves in dogs-dose dependence (Delius), 117
comparison of theoretical scattering results and ultrasonic data from clinical liver examinations (Lizzi), 377
factors affecting the continuous wave Doppler spectrum for the diagnosis of carotid arterial disease (Morin), 175
flow dynamics in a stenosed carotid bifurcation model-part I: basic velocity measurements (Fei), 21
intracoronary echo-contrast agents: abnormalities in myocardial function in a normal and reduced coronary perfusion model in dogs (Christensen), 199
investigation of Doppler waveforms in porcine renal allografts: Doppler-pathologic correlation (Piccirillo), 111
on estimating the number density of random scatterers from backscattered acoustic signals (Sleefe), 709
potential hazards of the dental descaler (Walmsley), 15
stability of flow patterns in the *in vivo* post-stenotic velocity field (Hutchison), 269
ultrasound attenuation estimation using the LMSE filters and the median filter (Jang), 51
wave space interpretation of scattered ultrasound (Lerner), 97
Morin, J. F., Johnston, K. W. and Law, Y. F.: factors affecting the continuous wave Doppler spectrum for the diagnosis of carotid arterial disease, 175
Morris, D. T.: an evaluation of the use of texture measurements for the tissue characterisation of ultrasonic images of in vivo human placentae, 387
Morse, S. S., see Ramos, I.
Mortimer, A. J. and Dyson, M.: the effect of therapeutic ultrasound on calcium uptake in fibroblasts, 499
Mortimer, A. J., see McLean, J. R.
Moshfeghi, M. and Waag, R. C.: *in vivo* and *in vitro* ultrasound beam distortion measurements of a large aperture and a conventional aperture focussed transducer, 415

Mouse
exposure levels for ultrasonic cavitation in the mouse neonate (Lee), 735
murine ovulatory resonse to ultrasound exposure and its gynecological relevance (Gates), 485
testing for the teratogenicity of pulsed ultrasound in mice (Child), 493
Muller, H. R.: age dependence of flow velocity in cerebral arteries, L745

Multi-gate pulsed Doppler
automated calculation of stenosis diameters from the width of the velocity jet with the use of a multi-gate pulsed Doppler system (de Knecht), 575
carotid artery wall properties in normotensive and borderline hypertensive subjects of various ages (van Merode), 563
differences in carotid artery wall properties between presumed healthy men and women (van Merode), 571
quantitative assessment of carotid artery disease by continuous wave and pulsed multigated Doppler-prospective comparison with angiography (Sillesen), 641
the diagnosis of minor to moderate atherosclerotic lesions in the carotid artery bifurcation by means of spectral broadening combined with the direct detection of flow disturbances using a multi-gate pulsed Doppler system (van Merode), 459
Murgia, G. M., see Barracca, A.

Murine neuroblastoma cells
protein synthesis by neuroblastoma cells is enhanced by exposure to burst-mode ultrasound cavitation (Edmonds), 219

Murine ovulatory resonse
murine ovulatory resonse to ultrasound exposure and its gynecological relevance (Gates), 485

Myocardial function
intracoronary echo-contrast agents: abnormalities in myocardial function in a normal and reduced coronary perfusion model in dogs (Christensen), 199

N

Neergaard, K., see Sillesen, H.

Neonatology
resistance index, blood flow velocity and resistance-area product in the cerebral arteries of very low birth weight infants during the first week of life (Evans), 103

Neoplasm
detection of neovascular signals in a 3 day Walker 256 rat carcinoma by CW Doppler ultrasound (Ramos), 123
Nessim, S. A., see Blankenhorn, D. H.

Neurosonology pioneers
neurosonology pioneers (White), 541

Non-linear parameter
in vivo measurements of ultrasound attenuation in normal or diseased liver (Parker), 127

O

Obstetric ultrasonography
a transmission line modelling approach to the interpretation of uterine Doppler waveforms (Mo), 365
an evaluation of the use of texture measurements for the tissue characterisation of ultrasonic images of *in vivo* human placentae (Morris), 387

antenatal fetal blood flow in the descending aorta and in the umbilical vein and their ratio in normal pregnancy (Chen), 263
conventional and color Doppler in the assessment of fetal and maternal circulation (Kurjak), 337
flexible software for the processing of obstetric ultrasound scan and related information (Clarkson), 611
the role of ultrasound in the early diagnosis of fetal structural defects following maternal anticonvulsant therapy (Wladimiroff), 657
Ogawa, S., Handa, N., Matsumoto, M., Etani, H., Yoneda, S., Kimura, K. and Kamada, T.: carbon dioxide reactivity of the blood flow in human basilar artery estimated by the transcranial Doppler method in normal men: a comparison with that of the middle cerebral artery, 479

Omentum fat
in vivo measurements of ultrasound attenuation in normal or diseased liver (Parker), 127
Ophir, J., see Lin, T.
Ostromogilsky, M., see Lizzi, F. L.

Otitis media
use of amplitude-modulated focused ultrasound for diagnosis of hearing disorders (Tsirulnikov), 277

Otosclerosis
use of amplitude-modulated focused ultrasound for diagnosis of hearing disorders (Tsirulnikov), 277
Ould-Said, H., see Godlewski, G.

Ovulation timing
murine ovulatory resonse to ultrasound exposure and its gynecological relevance (Gates), 485

Ovum
murine ovulatory resonse to ultrasound exposure and its gynecological relevance (Gates), 485

P

Padayachee, T. S., see Kontis, S.
Park, S. B., see Jang, H. S.
Parker, K. J., Asztely, M. S., Lerner, R. M., Schenk, E. A. and Waag, R. C.: *in vivo* measurements of ultrasound attenuation in normal or diseased liver, 127
Petitti, D. B., see Ziskin, M. C.
Piccirillo, M., Taylor, K. J. W., Flye, M. W., Burns, P. N., True, L. D. and Weltin, G.: investigation of Doppler waveforms in porcine renal allografts: Doppler-pathologic correlation, 111
Pignodel, C., see Godlewski, G.

Placenta
an evaluation of the use of texture measurements for the tissue characterisation of ultrasonic images of *in vivo* human placentae (Morris), 387
Potter, G., see Lin, T.

Power spectrum
a comparative study and assessment of Doppler ultrasound spectral techniques part I: estimation methods (Vaitkus), 661
a comparative study and assessment of Doppler ultrasound spectral techniques part II: methods and results (Vaitkus), 673

Pressure gradient
changes in Doppler waveforms can predict pressure reduction across internal carotid artery stenoses (Sillesen), 649

Protein
the effect of solvation on the ultrasonic absorption of bovine serum albumin solutions (Evans), 299
protein synthesis by neuroblastoma cells is enhanced by exposure to burst-mode ultrasound cavitation (Edmonds), 219

Protein synthesis
protein synthesis by neuroblastoma cells is enhanced by exposure to burst-mode ultrasound cavitation (Edmonds), 219
Pudov, V. I., see Tsirulnikov, E. M.

Pulsatility index
changes in Doppler waveforms can predict pressure reduction across internal carotid artery stenoses (Sillesen), 649
determination of the presence of fetal apnoea using umbilical artery and umbilical vein Doppler waveforms (Hoskins), 589
the relationship between fetal heart rate and Doppler blood flow velocity waveforms (van den Wijngaard), 593

Pulsation, arterial
ultrasound observation on pulsation in human carotid artery lesions (Blankenhorn), 583

Pulsed Doppler
age dependence of the flow velocity in the basal cerebral arteries-a transcranial Doppler ultrasound study (Grolimund), 191
antenatal fetal blood flow in the descending aorta and in the umbilical vein and their ratio in normal pregnancy (Chen), 263
automated calculation of stenosis diameters from the width of the velocity jet with the use of a multi-gate pulsed Doppler system (de Knecht), 575
carotid artery wall properties in normotensive and borderline hypertensive subjects of various ages (van Merode), 563
conventional and color Doppler in the assessment of fetal and maternal circulation (Kurjak), 337
differences in carotid artery wall properties between presumed healthy men and women (van Merode), 571
efficacy of echo-Doppler for the evaluation of renovascular disease (Handa), 1
flow dynamics in a stenosed carotid bifurcation model-part I: basic velocity measurements (Fei), 21
flow dynamics in a stenosed carotid bifurcation model-part II: derived indices (Rittgers), 33
investigation of Doppler waveforms in porcine renal allografts: Doppler-pathologic correlation (Piccirillo), 111

maximum likelihood frequency tracking of the audio pulsed Doppler ultrasound signal using a Kalman filter (Talhami), 599
quantitative assessment of carotid artery disease by continuous wave and pulsed multigated Doppler-prospective comparison with angiography (Sillesen), 641
resistance index, blood flow velocity and resistance-area product in the cerebral arteries of very low birth weight infants during the first week of life (Evans), 103
stability of flow patterns in the *in vivo* post-stenotic velocity field (Hutchison), 269
the relationship between fetal heart rate and Doppler blood flow velocity waveforms (van den Wijngaard), 593

Q

Quality control
flexible software for the processing of obstetric ultrasound scan and related information (Clarkson), 611

R

Radical formation
a cavitation and free radical dosimeter for ultrasound (McLean), 59
Rahn, K. H., see van Merode, T.
Ramos, I., Fernandez, L. A., Morse, S. S., Fortune, K. L. and Taylor K. J. W.: detection of neovascular signals in a 3 day Walker 256 rat carcinoma by CW Doppler ultrasound, 123

Rat
detection of neovascular signals in a 3 day Walker 256 rat carcinoma by CW Doppler ultrasound (Ramos), 123
ultrasound and spermatogenesis in the rat (Urry), 213

Real-time scanning
anisotropic ultrasonic backscatter from the renal cortex (Rubin), 507
antenatal fetal blood flow in the descending aorta and in the umbilical vein and their ratio in normal pregnancy (Chen), 263
conventional and color Doppler in the assessment of fetal and maternal circulation (Kurjak), 337
intracoronary echo-contrast agents: abnormalities in myocardial function in a normal and reduced coronary perfusion model in dogs (Christensen), 199
the role of ultrasound in the early diagnosis of fetal structural defects following maternal anticonvulsant therapy (Wladimiroff), 657
ultrasound observation on pulsation in human carotid artery lesions (Blankenhorn), 583

Recanalisation
intra-arterial ultrasonic imaging for recanalization by spark erosion (Bom), 257
Reeves, W. C., see Christensen, C. W.

Renal cortex
anisotropic ultrasonic backscatter from the renal cortex (Rubin), 507
Reneman, R. S., see de Knecht, S.
Reneman, R. S., see van Merode, T.

Reno-vascular disease
investigation of Doppler waveforms in porcine renal allografts: Doppler-pathologic correlation (Piccirillo), 111

Reports
annual convention of the American Institute of Ultrasound in Medicine, New Orleans, 6-9 October, 1987 (Frizzell), 245
Doppler measurement of maternal-fetal hemodynamics NICHD research planning workshop, Bethesda, Maryland, 9-10 September 1986 (Kremkau), 163
twelfth international symposium on ultrasonic imaging and tissue characterization, Arlington, 8-10 June 1987 (Lizzi), 81

Resistance index
conventional and color Doppler in the assessment of fetal and maternal circulation (Kurjak), 337
determination of the presence of fetal apnoea using umbilical artery and umbilical vein Doppler waveforms (Hoskins), 589
resistance index, blood flow velocity and resistance-area product in the cerebral arteries of very low birth weight infants during the first week of life (Evans), 103
the relationship between fetal heart rate and Doppler blood flow velocity waveforms (van den Wijngaard), 593

Resistance-area product
conventional and color Doppler in the assessment of fetal and maternal circulation (Kurjak), 337
resistance index, blood flow velocity and resistance-area product in the cerebral arteries of very low birth weight infants during the first week of life (Evans), 103
Reuss, A., see Wladimiroff, J. W.
Ritchie, K., see Mo, L. Y. L.
Rittgers, S. E. and Fei, D. Y.: flow dynamics in a stenosed carotid bifurcation model-part II: derived indices, 33
Rittgers, S. E., see Fei, D. Y.
Rorke, M. C., see Lizzi, F. L.
Rosenberg, K., see Duerinckx, A.
Rosenblyum, A. S., see Tsirulnikov, E. M.
Ross, P., see Edmonds, P. D.
Rouy, S., see Godlewski, G.
Rubin, J. M., Carson, P. L. and Meyer, C. R.: anisotropic ultrasonic backscatter from the renal cortex, 507

S

Sachs, E. S., see Wladimiroff, J. W.

Safety
epidemiology of human exposure to ultrasound: a critical review (Ziskin), 91
Sambuc, P., see Godlewski, G.

Sample volume
automated calculation of stenosis diameters from the width of the velocity jet with the use of a multi-gate pulsed Doppler system (de Knecht), 575

conventional and color Doppler in the assessment of fetal and maternal circulation (Kurjak), 337
flow dynamics in a stenosed carotid bifurcation model-part I: basic velocity measurements (Fei), 21
flow dynamics in a stenosed carotid bifurcation model-part II: derived indices (Rittgers), 33
the diagnosis of minor to moderate atherosclerotic lesions in the carotid artery bifurcation by means of spectral broadening combined with the direct detection of flow disturbances using a multi-gate pulsed Doppler system (van Merode), 459

Scattering
anisotropic ultrasonic backscatter from the renal cortex (Rubin), 507
comparison of theoretical scattering results and ultrasonic data from clinical liver examinations (Lizzi), 377
on estimating the number density of random scatterers from backscattered acoustic signals (Sleefe), 709
wave space interpretation of scattered ultrasound (Lerner), 97
Schenk, E. A., see Parker, K. J.
Schroeder, T., see Sillesen, H.
Sehgal, C. M., see Errabolu, R. L.
Seiler, R. W., see Grolimund, P.

Sensorineural deafness
use of amplitude-modulated focused ultrasound for diagnosis of hearing disorders (Tsirulnikov), 277
Serruys, P. W., see Bom, N.

Serum albumin
in vivo acoustic attenuation in liver: correlations with blood tests and histology (Duerinckx), 405

Sex-related
differences in carotid artery wall properties between presumed healthy men and women (van Merode), 571

Shock waves
biological effects of shock waves: kidney damage by shock waves in dogs-dose dependence (Delius), 117
biological effects of shock waves: kidney haemorrhage by shock waves in dogs-administration rate dependence (Delius), 689
testing for the teratogenicity of pulsed ultrasound in mice (Child), 493
Shortland, D. B., see Evans, D. H.

Side-lobes
in vivo and *in vitro* ultrasound beam distortion measurements of a large aperture and a conventional aperture focussed transducer (Moshfeghi), 415
Sillesen, H. and Schroeder, T.: changes in Doppler waveforms can predict pressure reduction across internal carotid artery stenoses, 649
Sillesen, H., Neergaard, K. and Hansen, H. J. B.: quantitative assessment of carotid artery disease by continuous wave and pulsed multigated Doppler-prospective comparison with angiography, 641

Sister chromatid exchanges
increased sister chromatid exchanges in Chinese hamster ovary cells exposed to high intensity pulsed ultrasound (Barnett), 397
Slager, C. J., see Born, N.
Sleefe, G. E. and Lele, P. P.: on estimating the number density of random scatterers from backscattered acoustic signals, 709
Smeets, F. M. A., see van Merode, T.

Smoking
an evaluation of the use of texture measurements for the tissue characterisation of ultrasonic images of *in vivo* human placentae (Morris), 387

Spectral analysis
a comparative study and assessment of Doppler ultrasound spectral techniques part I: estimation methods (Vaitkus), 661
a comparative study and assessment of Doppler ultrasound spectral techniques part II: methods and results (Vaitkus), 673
a new method of encoding and displaying audio Doppler-shift signals: the chromagram (Kontis), 465
a transmission line modelling approach to the interpretation of uterine Doppler waveforms (Mo), 365
chromaticity-coded Doppler blood velocity sonagrams: preliminary observations (Kontis), 473
comparison of four digital maximum frequency estimators for Doppler ultrasound (Mo), 355
comparison of theoretical scattering results and ultrasonic data from clinical liver examinations (Lizzi), 377
conventional and color Doppler in the assessment of fetal and maternal circulation (Kurjak), 337
factors affecting the continuous wave Doppler spectrum for the diagnosis of carotid arterial disease (Morin), 175
maximum likelihood frequency tracking of the audio pulsed Doppler ultrasound signal using a Kalman filter (Talhami), 599
quantitative assessment of carotid artery disease by continuous wave and pulsed multigated Doppler-prospective comparison with angiography (Sillesen), 641
the diagnosis of minor to moderate atherosclerotic lesions in the carotid artery bifurcation by means of spectral broadening combined with the direct detection of flow disturbances using a multi-gate pulsed Doppler system (van Merode), 459

Spectral broadening
factors affecting the continuous wave Doppler spectrum for the diagnosis of carotid arterial disease (Morin), 175
quantitative assessment of carotid artery disease by continuous wave and pulsed multigated Doppler-prospective comparison with angiography (Sillesen), 641
stability of flow patterns in the *in vivo* post-stenotic velocity field (Hutchison), 269
the diagnosis of minor to moderate atherosclerotic lesions in the carotid artery bifurcation by means of spectral broadening combined with the direct detection of flow disturbances using a multi-gate pulsed Doppler system (van Merode), 459

Spectral estimation
a comparative study and assessment of Doppler ultrasound spectral techniques part I: estimation methods (Vaitkus), 661
a comparative study and assessment of Doppler ultrasound spectral techniques part II: methods and results (Vaitkus), 673

Speed
in vivo measurements of ultrasound attenuation in normal or diseased liver (Parker), 127

Spermatogenesis
ultrasound and spermatogenesis in the rat (Urry), 213

Solvation
the effect of solvation on the ultrasonic absorption of bovine serum albumin solutions (Evans), 299

Stenosis
automated calculation of stenosis diameters from the width of the velocity jet with the use of a multi-gate pulsed Doppler system (de Knecht), 575
changes in Doppler waveforms can predict pressure reduction across internal carotid artery stenoses (Sillesen), 649
efficacy of echo-Doppler for the evaluation of renovascular disease (Handa), 1
factors affecting the continuous wave Doppler spectrum for the diagnosis of carotid arterial disease (Morin), 175
flow dynamics in a stenosed carotid bifurcation model-part I: basic velocity measurements (Fei), 21
flow dynamics in a stenosed carotid bifurcation model-part II: derived indices (Rittgers), 33
quantitative assessment of carotid artery disease by continuous wave and pulsed multigated Doppler-prospective comparison with angiography (Sillesen), 641
stability of flow patterns in the *in vivo* post-stenotic velocity field (Hutchison), 269
ultrasound observation on pulsation in human carotid artery lesions (Blankenhorn), 583

Stereotaxic hepatic surgery
ultrasonic and histopathological correlations of deep focal hepatic lesions induced by stereotaxic Nd-YAG laser applications (Godlewski), 287
Stewart, P. A., see Wladimiroff, J. W.

Streaming
the effect of therapeutic ultrasound on calcium uptake in fibroblasts (Mortimer), 499

Subcutaneous fat
measurement of ultrasonic non-linear parameter in excised fat tissues (Errabolu), 137
van Swaay, E., see Wladimiroff, J. W.

T

Talhami, H. E. and Kitney, R. I.: maximum likelihood frequency tracking of the audio pulsed Doppler ultrasound signal using a Kalman filter, 599
Taylor, K. J. W., see Piccirillo, M.
Taylor, K. J. W., see Ramos, I.

Teeth
applications of ultrasound in dentistry (Walmsley), 7
potential hazards of the dental descaler (Walmsley), 15

Temperature coefficients
in vivo measurements of ultrasound attenuation in normal or diseased liver (Parker), 127

Teratogenity
testing for the teratogenicity of pulsed ultrasound in mice (Child), 493

Tetraphthalic acid
a cavitation and free radical dosimeter for ultrasound (McLean), 59

Texture
an evaluation of the use of texture measurements for the tissue characterisation of ultrasonic images of *in vivo* human placentae (Morris), 387
anisotropic ultrasonic backscatter from the renal cortex (Rubin), 507

Therapeutic ultrasound
the effect of therapeutic ultrasound on calcium uptake in fibroblasts (Mortimer), 499

Thermal effects
biological effects of shock waves: kidney haemorrhage by shock waves in dogs-administration rate dependence (Delius), 689
ultrasound and spermatogenesis in the rat (Urry), 213

Threshold, cavitation
exposure levels for ultrasonic cavitation in the mouse neonate (Lee), 735

Time gain compensation
ultrasound attenuation estimation using the LMSE filters and the median filter (Jang), 51

Tissue characterisation
an evaluation of the use of texture measurements for the tissue characterisation of ultrasonic images of *in vivo* human placentae (Morris), 387
anisotropic ultrasonic backscatter from the renal cortex (Rubin), 507
application of Fourier analysis to clinical study of patterns of tissue movement (Tristam), 695
biological effects of shock waves: kidney damage by shock waves in dogs-dose dependence (Delius), 117
comparison of theoretical scattering results and ultrasonic data from clinical liver examinations (Lizzi), 377
correlation of ultrasonic attenuation with pathologic fat and fibrosis in liver disease (Lin), 729
detection of neovascular signals in a 3 day Walker 256 rat carcinoma by CW Doppler ultrasound (Ramos), 123

in vivo acoustic attenuation in liver: correlations with blood tests and histology (Duerinckx), 405
in vivo measurements of ultrasound attenuation in normal or diseased liver (Parker), 127
measurement of ultrasonic non-linear parameter in excised fat tissues (Errabolu), 137
on estimating the number density of random scatterers from backscattered acoustic signals (Sleefe), 709
wave space interpretation of scattered ultrasound (Lerner), 97

Tissue movement
application of Fourier analysis to clinical study of patterns of tissue movement (Tristam), 695

Toxicity
testing for the teratogenicity of pulsed ultrasound in mice (Child), 493
ultrasound and spermatogenesis in the rat (Urry), 213

Transcranial Doppler
age dependence of the flow velocity in the basal cerebral arteries-a transcranial Doppler ultrasound study (Grolimund), 191
carbon dioxide reactivity of the blood flow in human basilar artery estimated by the transcranial Doppler method in normal men: a comparison with that of the middle cerebral artery (Ogawa), 479

Transducers, miniature
intra-arterial ultrasonic imaging for recanalization by spark erosion (Bom), 257

Transmission line
a transmission line modelling approach to the interpretation of uterine Doppler waveforms (Mo), 365
Tristam, M., Barbosa, D. C., Cosgrove, D. O., Bamber, J. C. and Hill, C. R.: application of Fourier analysis to clinical study of patterns of tissue movement, 695
True, L. D., see Piccirillo, M.
Tsirulnikov, E. M., Vartanyan, I. A., Gersuni, G. V., Rosenblyum, A. S., Pudov, V. I. and Gavrilov, L. R.: use of amplitude-modulated focused ultrasound for diagnosis of hearing disorders, 277

Tumor vascularity
detection of neovascular signals in a 3 day Walker 256 rat carcinoma by CW Doppler ultrasound (Ramos), 123

U

Ultrasonic scattering
anisotropic ultrasonic backscatter from the renal cortex (Rubin), 507
comparison of theoretical scattering results and ultrasonic data from clinical liver examinations (Lizzi), 377
on estimating the number density of random scatterers from backscattered acoustic signals (Sleefe), 709
wave space interpretation of scattered ultrasound (Lerner), 97

Ultrasound propagation
in vivo and *in vitro* ultrasound beam distortion measurements of a large aperture and a conventional aperture focussed transducer (Moshfeghi), 415
in vivo measurements of ultrasound attenuation in normal or diseased liver (Parker), 127
measurement of ultrasonic non-linear parameter in excised fat tissues (Errabolu), 137
ultrasound attenuation estimation using the LMSE filters and the median filter (Jang), 51
wave space interpretation of scattered ultrasound (Lerner), 97

Umbilical artery
determination of the presence of fetal apnoea using umbilical artery and umbilical vein Doppler waveforms (Hoskins), 589
the relationship between fetal heart rate and Doppler blood flow velocity waveforms (van den Wijngaard), 593

Umbilical vein
antenatal fetal blood flow in the descending aorta and in the umbilical vein and their ratio in normal pregnancy (Chen), 263
determination of the presence of fetal apnoea using umbilical artery and umbilical vein Doppler waveforms (Hoskins), 589
Urry, R. L., Dougherty, K. A., Child, S. A., Fernandez, F., Linke, C. A. and Carstensen, E. L.: ultrasound and spermatogenesis in the rat, 213

Utero-placental circulation
a transmission line modelling approach to the interpretation of uterine Doppler waveforms (Mo), 365

V

Vaitkus, P. J. and Cobbold, R. S. C.: a comparative study and assessment of Doppler ultrasound spectral techniques part I: estimation methods, 661
Vaitkus, P. J., Cobbold, R. S. C. and Johnston, K. W.: a comparative study and assessment of Doppler ultrasound spectral techniques part II: methods and results, 673
Vartanyan, I. A., see Tsirulnikov, E. M.

Vascular disease
automated calculation of stenosis diameters from the width of the velocity jet with the use of a multi-gate pulsed Doppler system (de Knecht), 575
changes in Doppler waveforms can predict pressure reduction across internal carotid artery stenoses (Sillesen), 649
efficacy of echo-Doppler for the evaluation of renovascular disease (Handa), 1
factors affecting the continuous wave Doppler spectrum for the diagnosis of carotid arterial disease (Morin), 175
flow dynamics in a stenosed carotid bifurcation model-part I: basic velocity measurements (Fei), 21
flow dynamics in a stenosed carotid bifurcation model-part II: derived indices (Rittgers), 33
intracoronary echo-contrast agents: abnormalities in myocardial function in a normal and reduced coronary perfusion model in dogs (Christensen), 199

quantitative assessment of carotid artery disease by continuous wave and pulsed multigated Doppler-prospective comparison with angiography (Sillesen), 641
stability of flow patterns in the *in vivo* post-stenotic velocity field (Hutchison), 269
ultrasound observation on pulsation in human carotid artery lesions (Blankenhorn), 583

Velocity profiles
automated calculation of stenosis diameters from the width of the velocity jet with the use of a multi-gate pulsed Doppler system (de Knecht), 575
carotid artery wall properties in normotensive and borderline hypertensive subjects of various ages (van Merode), 563
quantitative assessment of carotid artery disease by continuous wave and pulsed multigated Doppler-prospective comparison with angiography (Sillesen), 641
stability of flow patterns in the *in vivo* post-stenotic velocity field (Hutchison), 269
the diagnosis of minor to moderate atherosclerotic lesions in the carotid artery bifurcation by means of spectral broadening combined with the direct detection of flow disturbances using a multi-gate pulsed Doppler system (van Merode), 459

Viscosity
flow dynamics in a stenosed carotid bifurcation model-part I: basic velocity measurements (Fei), 21

Volume flow
antenatal fetal blood flow in the descending aorta and in the umbilical vein and their ratio in normal pregnancy (Chen), 263
conventional and color Doppler in the assessment of fetal and maternal circulation (Kurjak), 337

W

Waag, R. C., see Moshfeghi, M.
Waag, R. C., see Parker, K. J.
Waag, R. C., see Lerner, R. M.
Wai, P., see Lizzi, F. L.
Walmsley, A. D.: applications of ultrasound in dentistry, 7
Walmsley, A. D.: potential hazards of the dental ultrasonic descaler, 15

Wave reflections
a transmission line modelling approach to the interpretation of uterine Doppler waveforms (Mo), 365

Wave space
wave space interpretation of scattered ultrasound (Lerner), 97

Waveform analysis
changes in Doppler waveforms can predict pressure reduction across internal carotid artery stenoses (Sillesen), 649
conventional and color Doppler in the assessment of fetal and maternal circulation (Kurjak), 337

efficacy of echo-Doppler for the evaluation of renovascular disease (Handa), 1
factors affecting the continuous wave Doppler spectrum for the diagnosis of carotid arterial disease (Morin), 175
investigation of Doppler waveforms in porcine renal allografts: Doppler-pathologic correlation (Piccirillo), 111
maximum likelihood frequency tracking of the audio pulsed Doppler ultrasound signal using a Kalman filter (Talhami), 599
quantitative assessment of carotid artery disease by continuous wave and pulsed multigated Doppler-prospective comparison with angiography (Sillesen), 641
resistance index, blood flow velocity and resistance-area product in the cerebral arteries of very low birth weight infants during the first week of life (Evans), 103
the relationship between fetal heart rate and Doppler blood flow velocity waveforms (van den Wijngaard), 593
Weltin, G., see Piccirillo, M.
White, D. N.: neurosonology pioneers, 541
White, G., see Hoskins, P. R.
van den Wijngaard, J. A. G. W., van Eyck, J. and Wladimiroff, J. W.: the relationship between fetal heart rate and Doppler blood flow velocity waveforms, 593
Wladimiroff, J. W., Stewart, P. A., Reuss, A., van Swaay, E., Lindhout, D. and Sachs, E. S.: the role of ultrasound in the early diagnosis of fetal structural defects following maternal anticonvulsant therapy, 657
Wladimiroff, J. W., see van den Wijngaard, J. A. G. W.

X

Xuan, Z., see Delius, M.

Y

Yaremko, M. M., see Lizzi, F. L.
Yoneda, S., see Handa, N
Yoneda, S., see Ogawa, S.
Yun, L. C. M., see Mo, L. Y. L.

Z

Ziskin, M. C. and Petitti, D. B.: epidemiology of human exposure to ultrasound: a critical review, 91 (erratum L429)
Ziskin, M. C. and Petitti, D. B.: erratum-epidemiology of human exposure to ultrasound, L429